

Changes in the North Carolina Building Code



2006 / 2009

**COMPARISON OF
SIGNIFICANT CHANGES**

Accessibility Code Transition



Mandatory Enforcement Date
January 1st, 2010



New Accessibility Code, Summary



- **Section 1007, Accessible Means Of Egress**
 - Required number, continuity, Area of Refuge (ARA), stairs
- **Chapter 11, Accessibility**
 - Accessible routes, entrances, parking, dwelling units (types A, B), special occupancies, signage
- **ICC/ANSI A117.1**
 - All other technical details
- **Section 3409, Existing Buildings**
 - Change of occupancy, alterations, historic buildings

2009 NCBC, Table 508.2

**TABLE 508.2
INCIDENTAL USE AREAS**

| ROOM OR AREA | SEPARATION AND/OR PROTECTION |
|---|--|
| Furnace room where any piece of equipment is over 400,000 Btu per hour input | 1 hour or provide automatic fire-extinguishing system |
| Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower | 1 hour or provide automatic fire-extinguishing system |
| Refrigerant machinery rooms | 1 hour or provide automatic sprinkler system |
| Parking garage (Section 406.2) | 2 hours; or 1 hour and provide automatic fire-extinguishing system |
| Hydrogen cut-off rooms, not classified as Group H | 1-hour in Group B, F, M, S and U occupancies. 2-hour in Group A, E, I and R occupancies. |
| Incinerator rooms | 2 hours and automatic sprinkler system |
| Paint shops, not classified as Group H, located in occupancies other than Group F | 2 hours; or 1 hour and provide automatic fire-extinguishing system |
| Laboratories and vocational shops, not classified as Group H, located in Group E or I-2 occupancies | 1 hour or provide automatic fire-extinguishing system |

| | |
|---|--|
| Laundry rooms over 100 square feet | 1 hour or provide automatic fire-extinguishing system |
| Storage rooms over 100 square feet | 1 hour or provide automatic fire-extinguishing system |
| <u>Group I-2 commercial kitchens</u> | <u>Smoke-resistant construction and doors</u> |
| <u>Group I-2 laundries equal to or less than 100 square feet</u> | <u>Smoke-resistant construction and doors</u> |
| <u>Group I-2 rooms or spaces that contain fuel-fired heating equipment</u> | <u>Smoke-resistant construction and doors</u> |
| Group I-2 waste and linen collection rooms | 1 hour |
| Group I-3 cells equipped with padded surfaces | 1 hour |
| Waste and linen collection rooms over 100 square feet | 1 hour or provide automatic fire-extinguishing system |
| Stationary storage battery systems having a liquid capacity of more than 100 gallons used for facility standby power, emergency power or uninterrupted power supplies | 1-hour in Group B, F, M, S and U occupancies. 2-hour in Group A, E, I and R occupancies. |

For SI: 1 square foot = 0.0929 m², 1 pound per square inch = 6.9 kPa, 1 British thermal unit per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

Group I-2 commercial kitchens



Smoke-resistant construction and doors



Group I-2 laundries 100 sq. ft. or less



Smoke-resistant construction and doors



What is smoke resistant construction?



All of the detail requirements for smoke resistant construction are given in section 508.2.2.1. The construction described in this section is required to be neither a smoke barrier nor a smoke partition.



Walls shall be continuous from the floor to the fire-resistance-rated ceiling above or to the floor or roof deck above. Doors shall be self- or automatic closing upon the detection of smoke.

2009 NCBC, Table 508.3.3



**TABLE 508.3.3
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

| OCCUPANCY | A ^e , E | | I | | R ^d | | F-2, S-2 ^{c,d} , U ^d | | B ^b , F-1, M ^b , S-1 | | H-1 | | H-2 | | H-3, H-4, H-5 | |
|--|--------------------|----|---|----|----------------|----|--|----|--|----|-----|----|-----|----|---------------|----------------|
| | S | NS | S | NS | S | NS | S | NS | S | NS | S | NS | S | NS | S | NS |
| A ^e , E | N | N | 1 | 2 | 1 | 2 | N | 1 | 1 | 2 | NP | NP | 3 | 4 | 2 | 3 ^a |
| I | — | — | N | N | 1 | NP | 1 | 2 | 1 | 2 | NP | NP | 3 | NP | 2 | NP |
| R ^d | — | — | — | — | N | N | 1 | 2 | 1 | 2 | NP | NP | 3 | NP | 2 | NP |
| F-2, S-2 ^{c,d} , U ^d | — | — | — | — | — | — | N | N | 1 | 2 | NP | NP | 3 | 4 | 2 | 3 ^a |
| B ^b , F-1, M ^b , S-1 | — | — | — | — | — | — | — | — | N | N | NP | NP | 2 | 3 | 1 | 2 ^a |
| H-1 | — | — | — | — | — | — | — | — | — | — | N | NP | NP | NP | NP | NP |
| H-2 | — | — | — | — | — | — | — | — | — | — | — | — | N | NP | 1 | NP |
| H-3, H-4, H-5 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | N | NP |

For SI: 1 square foot = 0.0929 m².

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. For Group H-5 occupancies, see Section 903.2.4.2.

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

1. Area is less than 10 percent of the floor area;
2. Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
3. Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4.

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

Separation of mixed occupancies



- Incidental Use Areas, Table 508.2
- Accessory Occupancies, Section 508.3.1 (10% or less)
- Nonseparated Occupancies
- Separated Occupancies

| |
|---------|
| Group B |
| Group B |
| Group M |
| Group M |
| Group B |

Nonseparated Occupancy

One Story

Occupancy Groups B and M

Total area, 10,000sf

Type IIB construction

Nonsprinkled

Assume no area increase

Table 503, Allowable Height and Area

Group B = 4 story, 23,000sf

Group M = 4 story, 12,500sf

Because the total area is less than the most restrictive, nonseparated mixed use is allowed.

Separated Occupancy

Occupancy Groups M and S-2

Total area, 11,500sf

Type VB construction

Nonsprinkled

Assume no area increase

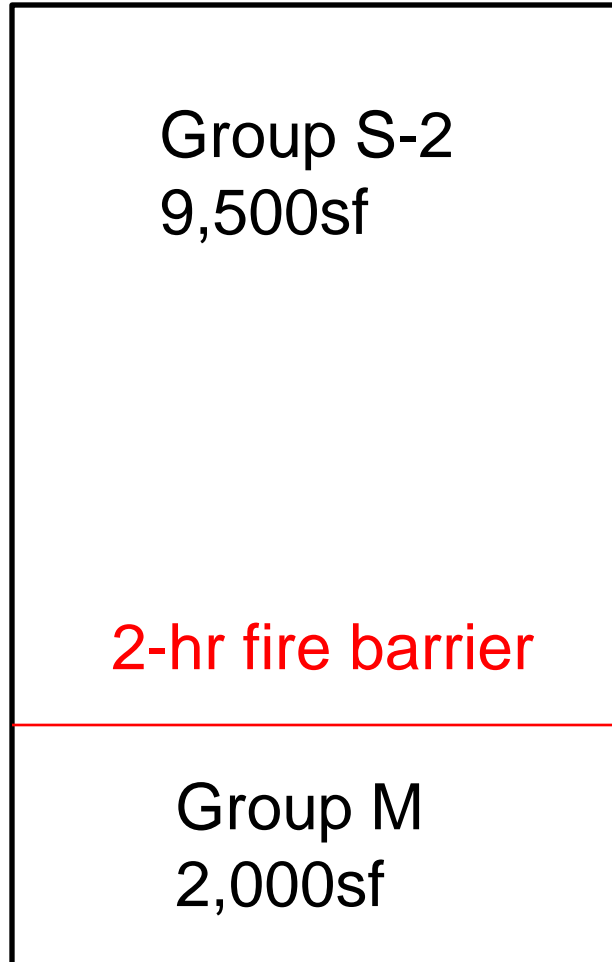


Table 503, Allowable Height and Area

Group S-2 = 2 story, 13,500sf

Group M = 1 story, 9,000sf

$$9,500/13,500 = 0.70$$

$$2,000/9,000 = 0.22$$



$$0.92$$

Separation of mixed occupancies,
same group in Table 508.3.3

Group S-1
46,200sf

Group B
30,000sf

Occupancy Groups B and S-1
Total area, 76,200sf
Type IIB construction
Sprinkled
Sprinkler increase

Mixed occupancy separation, Table 508.3.3



- **Step 1**
 - The warehouse is classified as a Group S-1.
 - The office is classified as a Group B.
- **Step 2**
 - Table 508.3.3 indicates that there is no required separation. (N)
- **Step 3**
 - Because the fire area containing the S-1 exceeds 12,000sf, section 903 requires the entire building to be sprinkled.
 - Note that even if the uses were separated, section 903.2.8 requires a sprinkler throughout all buildings containing a Group S-1 fire area greater than 12,000sf.

Mixed occupancy separation, Table 508.3.3



- **Step 4**

- The allowable area with sprinkler increase for the Group B is 92,000sf
- The allowable area with sprinkler increase for the Group S-1 is 70,000sf.

- $30,000/92,000 = .326$

- $46,200/70,000 = .66$



0.986

Separation of mixed occupancies,
same group in Table 508.3.3

Group S-1
46,200sf

Group B
30,000sf

Occupancy Groups B and S-1
Total area, 76,200sf
Type IIB construction
Sprinkled
Sprinkler increase

Per Table 508.3.3,
no separation is required

The 2006 code would
have required a 2-hour
separation

Fire barrier rating in same occupancy



- Example
- A restaurant has a total area of 6,000sf.
- In order to reduce the fire area and alleviate the requirement for sprinkler, the fire area needs to be reduced.
- Table 508.3.3 indicates No Separation Requirement.
- Refer to Table 706.3.9 for fire barrier ratings between fire areas.

Table 706.3.9



**TABLE 706.3.9
FIRE-RESISTANCE RATING REQUIREMENTS FOR FIRE
BARRIER ASSEMBLIES OR HORIZONTAL ASSEMBLIES
BETWEEN FIRE AREAS**

| OCCUPANCY GROUP | FIRE-RESISTANCE RATING (hours) |
|---|---------------------------------------|
| H-1, H-2 | 4 |
| F-1, H-3, S-1 | 3 |
| A, B, E, F-2, H-4, H-5, I, M, R, S-2 | 2 |
| U | 1 |

304, Training or skill development... Group B



..not within a school or academic program.



310.1, Congregate Living Facility, R-3



- Definition - A building or part thereof that contains sleeping units where residents share bathroom and/or kitchen facilities.
- Examples may include??
 - Dormitories
 - Boarding houses
 - Fraternity/Sorority houses
- Per Table 1004.1.1, the occupant load factor for a Residential occupancy is 200 square feet gross.
 - (3,200 square feet total = 16 occupants)

310.1, Child day care facilities, Group R-3



...eight or fewer persons with no more than five preschool age.



402.11, Playground structures in a mall



This applies only to structures that exceed 10' in height and 150 square feet in area. This section addresses, flammability of materials, fire protection, separation from other structures and allowable area.



403.3, Fire resistance rating, High Rise



The '06 code allowed a reduction from type IA to a IB construction. The '09 code allows the same, but only in buildings not greater than 420' in height.

The '06 code allowed a reduction in shaft enclosure ratings. The '09 code allows the same, but only in buildings not greater than 420' in height.



NC Building Code Changes

A horizontal timeline diagram with a red bar at the top. A white circle with a double outline is positioned in the center of the red bar. Below the red bar, a vertical dashed line divides the space into two columns. The left column is labeled '2009' and the right column is labeled '2006'. Each column contains a bulleted list of code changes. At the bottom, a teal box contains a paragraph of text.

2009

- Section 407.8
- Locks and latches, I-2

2006

- Section 407.8

The 2006 code allowed door locking arrangements in I-2 occupancies. The 2009 code allows the same, but has added that remote locking and unlocking is required where more than 10 locks are necessary to be unlocked when moving occupants from one smoke compartment to another.

When are smoke compartments required?



- In I-2 occupancies
- Every story where patients sleep or receive treatment or other stories that have an occupant load of 50 or more
- Every story shall have at least two smoke compartments.
- Smoke compartments shall not exceed 22,500sf.
- Travel distance to smoke barrier doors not to exceed 200'

410.2 Stages and Platforms



The '06 code had a NC amendment which allowed an overhead valance and curtain to be installed over a platform. The '09 code has deleted this exception. It would now be considered a stage.



Table 414.2.2 Control Areas



The '06 code (footnote b) allowed only two control areas per floor in groups M and S. The '09 code has deleted this footnote and could possibly allow more than two control areas per floor.

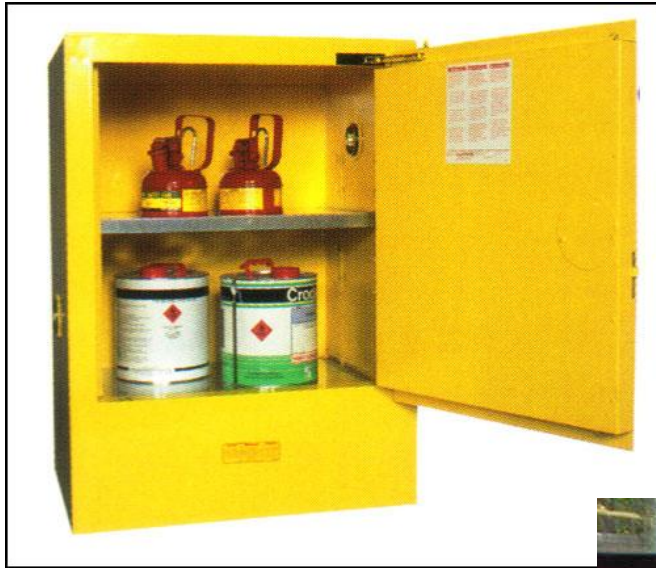
[F] TABLE 414.2.2
DESIGN AND NUMBER OF CONTROL AREAS

| FLOOR LEVEL | | PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA ^a | NUMBER OF CONTROL AREAS PER FLOOR | FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS ^b |
|-------------------|---------------|--|-----------------------------------|--|
| Above grade plane | Higher than 9 | 5 | 1 | 2 |
| | 7-9 | 5 | 2 | 2 |
| | 6 | 12.5 | 2 | 2 |
| | 5 | 12.5 | 2 | 2 |
| | 4 | 12.5 | 2 | 2 |
| | 3 | 50 | 2 | 1 |
| | 2 | 75 | 3 | 1 |
| | 1 | 100 | 4 | 1 |
| Below grade plane | 1 | 75 | 3 | 1 |
| | 2 | 50 | 2 | 1 |
| | Lower than 2 | Not Allowed | Not Allowed | Not Allowed |

a. Percentages shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), with all increases allowed in the notes to those tables.

b. Fire barriers shall include walls and floors as necessary to provide separation from other portions of the building.

Control areas



Hazardous materials storage cabinets or an area separated by a fire barrier.



501.2, Building address numbers



501.2, Building address numbers



2006 code
3" min.

2009 code
4" min. in height



505.2, Area limitation, mezzanine



New exception #2 now allows up ½ the area of the room it's located in provided the building is of types I or II construction, is fully sprinkled and has an approved emergency voice/alarm communication system.



505.4, Openness of mezzanine



In other than Groups H and I occupancies, exception #5 allows an enclosed mezzanine provided the building is two stories or less in height, sprinkled and the mezzanine has at least two remote means of egress.

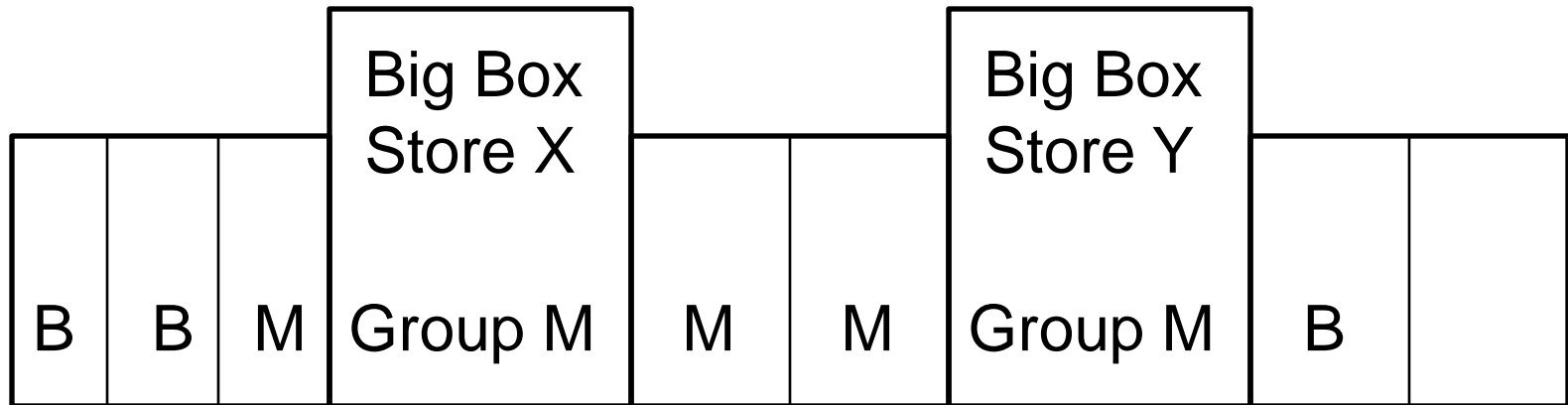


507.3, Unlimited Area Building



The 2009 code allows A-1 and A-2 occupancies in unlimited area buildings of other than type V construction provided that they are separated per T. 508.3.3., the Group A area does not exceed that permitted by 503.1 and all exits discharge directly to the exterior.





60' clear

- Existing sprinkled, one story building, type IIB construction.
- Complies with the requirements of unlimited area building
 - Allowed to include Groups B, F, M and S occupancies
 - Sprinkled
 - Surrounded by 60' public way or yards
 - Other than type V construction

507.3, exception #3, Unlimited Area



| |
|-----------|
| Group A-2 |
|-----------|

- 2-hour fire barrier required
 - No reduction for sprinkler
 - (Table 508.3.3)
- Maximum area of Group A-2
 - 38,000 square feet
 - (Table 503) 9,500sf + 300%
- All required exits shall discharge directly to the exterior.

Table 602.4, Wood member size, Type IV



**TABLE 602.4
WOOD MEMBER SIZE**

| MINIMUM NOMINAL SOLID SAWN SIZE | | MINIMUM GLUED-LAMINATED NET SIZE | |
|---------------------------------|-------------|----------------------------------|--------------------------------|
| Width, inch | Depth, inch | Width, inch | Depth, inch |
| 8 | 8 | 6 ³ / ₄ | 8 ¹ / ₄ |
| 6 | 10 | 5 | 10 ¹ / ₂ |
| 6 | 8 | 5 | 8 ¹ / ₄ |
| 6 | 6 | 5 | 6 |
| 4 | 6 | 3 | 6 ⁷ / ₈ |

For SI: 1 inch = 25.4 mm.



Wall and Partition Identification



- Section 703.5 requires that fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions be permanently identified with signs or stenciling. Such identification shall be above any ceiling or other concealed space.

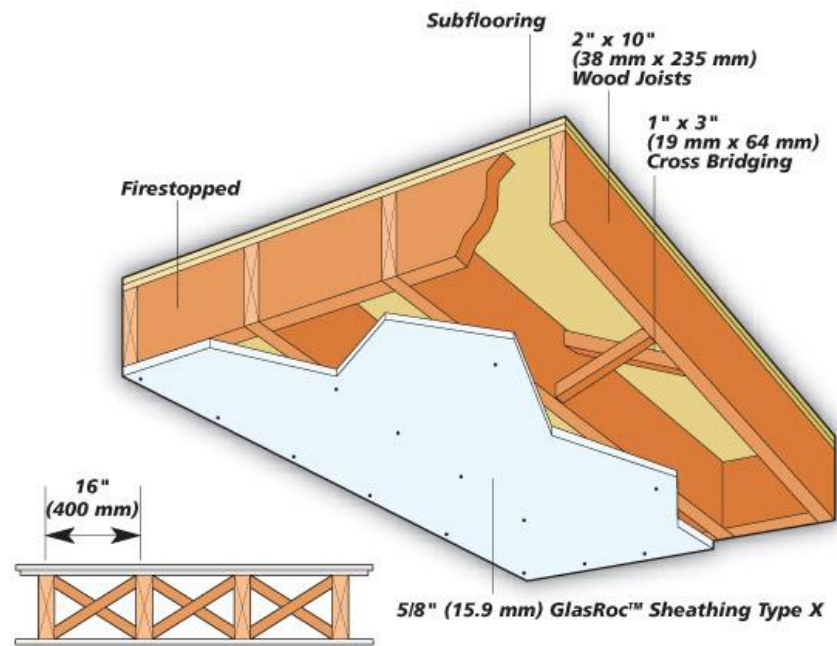
707.14.2, Enclosed elevator lobby



Exception #6 offers an additional alternative to required elevator lobbies. The exception specifies pressurization of the elevator shaft. Details include; minimum pressures, protected duct systems, fan system requirements, standby power and activation.



712.4.1.2, Membrane Penetrations, Ceiling



Reference: UL Design L501



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712.4.1.2, Membrane Penetrations, Ceiling



Exception #2 allows a membrane penetration in a maximum 2-hour rated horizontal assembly by steel electrical boxes.

Provided that;

- Do not exceed 16 square inches
- Aggregate does not exceed 100 square inches in 100 square feet
- Annular space does not exceed 1/8"



713.6, Joint Systems in Smoke Barriers



- Shall be tested in accordance with UL 2079 for air leakage
- Air leakage rate (L rating) not to exceed 5cfm / lineal foot

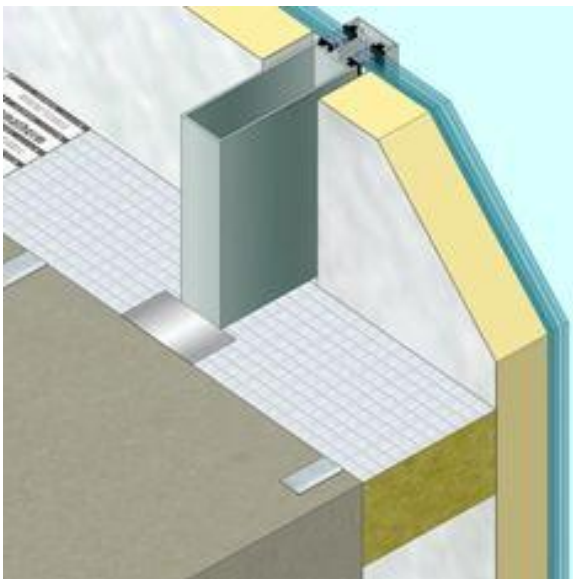


Table 720.1(3), Rated Floor Assemblies



TABLE 720.1(3)—continued
MINIMUM PROTECTION FOR FLOOR AND ROOF SYSTEMS^{a,q}

| FLOOR OR ROOF CONSTRUCTION | ITEM NUMBER | CEILING CONSTRUCTION | THICKNESS OF FLOOR OR ROOF SLAB (inches) | | | | MINIMUM THICKNESS OF CEILING (inches) | | | |
|--|----------------|--|--|-----------|-----------|-----------|---|-----------|-----------|-----------|
| | | | 4 hour | 3 hour | 2 hour | 1 hour | 4 hour | 3 hour | 2 hour | 1 hour |
| 25. Wood I-joist (minimum I-joist depth 9 $\frac{1}{4}$ " with a minimum flange depth of 1 $\frac{1}{2}$ " and a minimum flange cross-sectional area of 5.25 square inches; minimum web thickness of $\frac{3}{8}$ ") @ 24" o.c., 1 $\frac{1}{2}$ " mineral fiber insulation (2.5 pcf - nominal) resting on hat-shaped channels. | 25-1.1 | Minimum 0.026" thick hat-shaped channel 16" o.c. (channels doubled at wallboard end joints), placed perpendicular to the joist and attached to each joist by 1 $\frac{5}{8}$ " Type S drywall screws. $\frac{5}{8}$ " Type C gypsum wallboard applied perpendicular to the channel with end joints staggered and fastened with 1 $\frac{1}{8}$ " Type S drywall screws spaced 12" o.c. in the field and 8" o.c. at the wallboard ends. Wallboard joints to be taped and covered with joint compound. | — | — | — | Varies | — | — | — | Varies |

This table now includes 5 additional floor assemblies using wood I-joists. Note: All are limited to 1-hour fire-resistance.

Appendix B
Fire Protection

Rating Detail# Sheet# Design# Penetrations

FIRE PROTECTION REQUIREMENTS

Life Safety Plan Sheet #, if Provided _____

Structural Frame

Bearing Walls

Nonbearing Walls

Floor Construction

Roof Construction

Shafts

Corridors, Occ. Sep.,
Smoke Barriers,
Tenant Sep., Etc...

| BUILDING ELEMENT | FIRE SEPARATION DISTANCE (FEET) | RATING | | DETAIL # AND SHEET # | DESIGN # FOR RATED ASSEMBLY | DESIGN # FOR RATED PENETRATION | DESIGN # FOR RATED JOINTS |
|--|--|--------|---------------------------------------|----------------------------|--------------------------------------|--------------------------------------|------------------------------------|
| | | REQ'D | PROVIDED (W/ _____ * REDUCTION) | | | | |
| Structural Frame, including columns, girders, trusses | | | | | | | |
| Bearing Walls | | | | | | | |
| Exterior | | | | | | | |
| North | | | | | | | |
| East | | | | | | | |
| West | | | | | | | |
| South | | | | | | | |
| Interior | | | | | | | |
| Nonbearing Walls and Partitions | | | | | | | |
| Exterior walls | | | | | | | |
| North | | | | | | | |
| East | | | | | | | |
| West | | | | | | | |
| South | | | | | | | |
| Interior walls and partitions | | | | | | | |
| Floor Construction Including supporting beams and joists | | | | | | | |
| Roof Construction Including supporting beams and joists | | | | | | | |
| Shaft Enclosures - Exit | | | | | | | |
| Shaft Enclosures - Other | | | | | | | |
| Corridor Separation | | | | | | | |
| Occupancy Separation | | | | | | | |
| Party/Fire Wall Separation | | | | | | | |
| Smoke Barrier Separation | | | | | | | |
| Tenant Separation | | | | | | | |
| Incidental Use Separation | | | | | | | |

* Indicate section number permitting reduction

903.2.1.2, Group A-2 sprinkler requirements



[F] 903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m²);
2. The fire area has an occupant load of 100 or more;
or
3. The fire area is located on a floor other than the level of exit discharge.

903.2.1.2, Group A-2 sprinkler requirements



Ruling on NCIFC A-2 Sprinkler Requirement

Effective June 1, 2009 the 2009 Fire and Building Code was amended to go back to the 300 for A-2 with the exception of 100 for nightclubs. The BCC approved the change in March and it cleared rule making in May making it effective June 1st.

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903.2.1.2, Group A-2 sprinkler requirements



903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464.5 m²);
2. The fire area has an occupant load of ~~400~~ 300 or more, except 100 for nightclubs; or
3. The fire area is located on a floor other than the level of exit discharge.

SECTION 202 DEFINITIONS

NIGHTCLUB. See Section 902.1

SECTION 902 DEFINITIONS

NIGHTCLUB. An establishment meeting all of the following:

1. Has a posted capacity or occupant load that exceeds one occupant per 15 square feet net;
2. Provides live or recorded entertainment by performing artists; and
3. Serves alcoholic beverages.

905.3.1, Building Height, Standpipe System



Class III standpipe systems are required where the floor level of the highest floor is located more than 30' above the lowest level of fire department access.

Exception #5

In determining the height, it is not necessary to include recessed loading docks for four vehicles or less nor conditions that make access by the FD impractical or impossible.



907.2.3, Group E manual fire alarm



A manual fire alarm system shall be installed in Group E occupancies.



Exception # 1.

In other than child day care centers,
Group E occupancies with an
occupant load of less than 50.

What is a Group E child day care facility?



Section 305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2-1/2 years of age, shall be classified as a Group E occupancy.

What if the children are under 2-1/2 years of age??

308.5.2, Child care facility



Group I-4

- Supervision or personal care
- On less than a 24-hour basis
- More than 5 children
- 2-1/2 years of age or less

Group E

- Supervision or personal care
- On less than a 24-hour basis
- > 5 children, but <100 children
- 2-1/2 years of age or less
- Rooms where children are located shall be on the level of exit discharge and each room shall have an exit door directly the exterior.

1004.2, The occupant load of any building may be increased from that determined by Table 1004.1.1 provided that all other requirements of the code are met. Such modified number shall not exceed one occupant per 7 square feet of occupiable space.









| | | | | | | |
|--|--|--|-----------------------------|---------------|-------------------------|---------------|
|  | <h1>Catawba County</h1> <h2>Building Services Department</h2> <hr/> |  | | | | |
|  | <h3>OCCUPANCY BY MORE THAN</h3> |  | | | | |
|  | <h3><u>192 ONE HUNDRED NINETY TWO</u></h3> |  | | | | |
| | <p>(PERSONS, OTHER THAN EMPLOYEES)</p> | | | | | |
|  | <h3>IS DANGEROUS AND UNLAWFUL</h3> |  | | | | |
| | <p>ALL EXITS MUST BE FULLY ACCESSIBLE AND OPERABLE AT ALL TIMES PREMISES ARE OCCUPIED.</p> | | | | | |
| <p>PREMISES:</p> | <p><u>Market on Main</u> 335 Main Ave. SW Hickory <u>Total Upper Floor</u></p> | <table border="0"><tr><td>_____ BUILDING INSPECTOR</td><td>_____ DATE</td></tr><tr><td>_____ FIRE INSPECTOR</td><td>_____ DATE</td></tr></table> | _____ BUILDING INSPECTOR | _____ DATE | _____ FIRE INSPECTOR | _____ DATE |
| _____ BUILDING INSPECTOR | _____ DATE | | | | | |
| _____ FIRE INSPECTOR | _____ DATE | | | | | |
| <p>THIS PLACARD MUST BE DISPLAYED IN A PROMINENT PLACE.</p> | | | | | | |

Table 1004.1.1, Occupant Load



The occupant load of a Day Care facility shall be based on 35 square feet net.

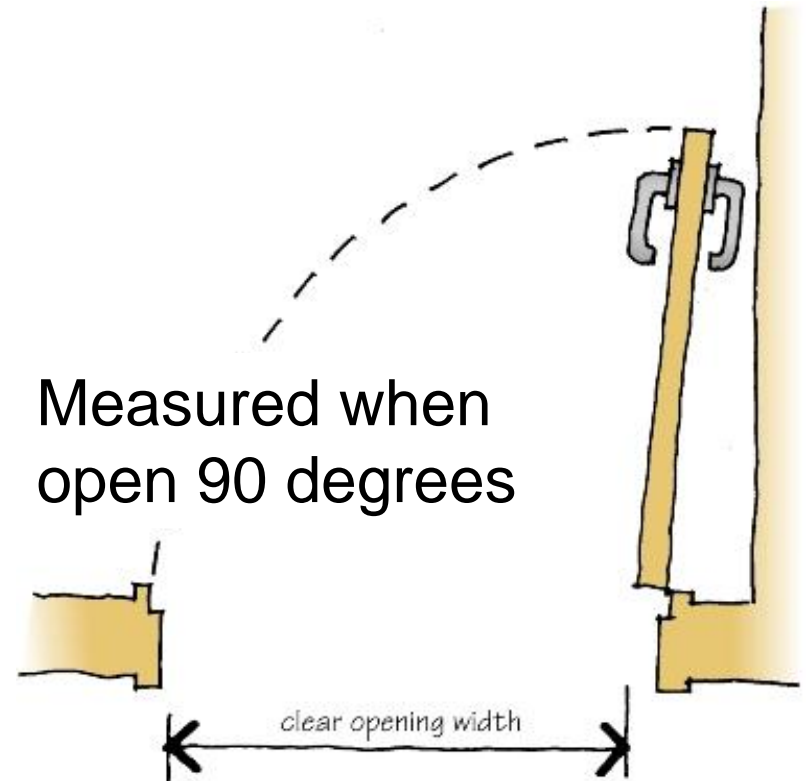


1008.1.1, exception 7, Size of Doors



In other than R-1 occupancies, the minimum widths shall not apply to interior egress doors within dwelling units and sleeping units that are not required to be a Type A or B accessible unit.

What is the minimum required clear width??



1008.1.9, Panic Hardware



In general, what occupancies require panic hardware??



What occupant load number typically triggers the requirement for panic hardware??

1008.1.9, Panic Hardware



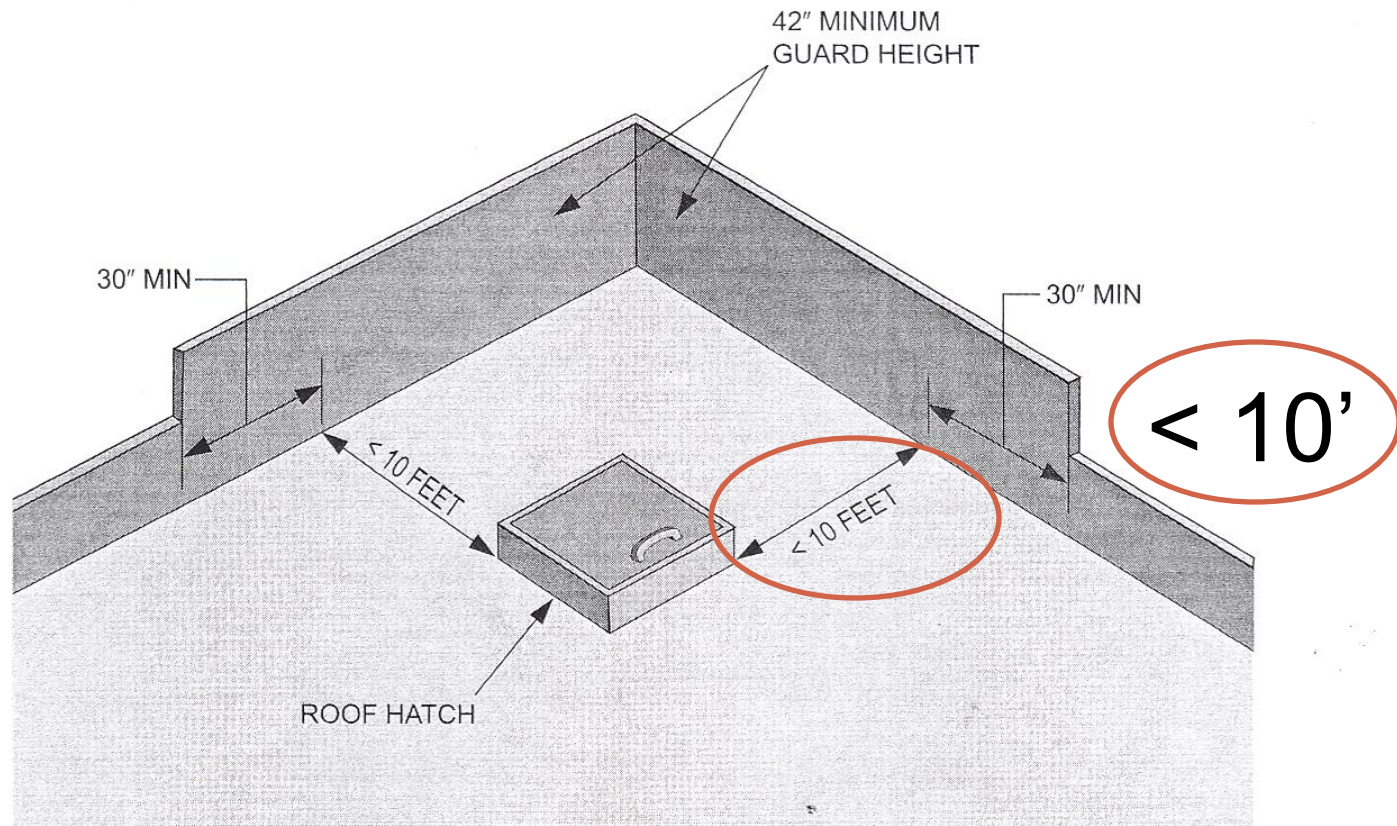
Groups A and E with an occupant load of 50 or more.



All Group H occupancies require panic hardware.

Also, electrical rooms with equipment rated 1,200amps or more and over 6 feet wide

1009.11.2, Protection at roof-hatch opening



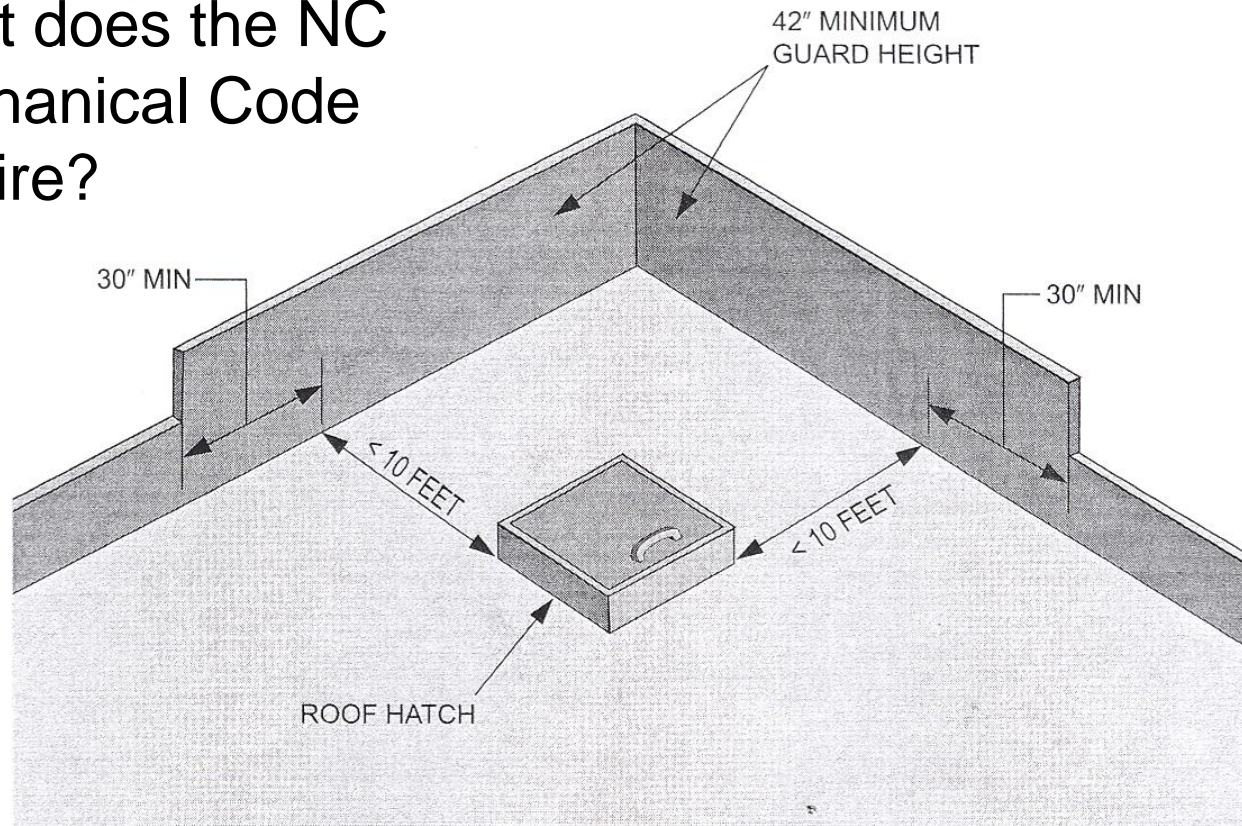
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Figure 1013.6
PROTECTION AT ROOF-HATCH OPENING

1009.11.2, Protection at roof-hatch opening



What does the NC Mechanical Code require?



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Figure 1013.6
PROTECTION AT ROOF-HATCH OPENING

1014.2, Egress through intervening space



1014.2, Egress through intervening space



Egress through Group M stockrooms is permitted provided;

1. The stock is of same hazard as main retail area
2. Not more than 50% of exit access is through stockroom
3. Stockroom is not subject to locking from egress side
4. There is a demarcated, minimum 44" wide aisle defined by full or partial height fixed walls or similar construction

1014.2, Egress through intervening space



1014.2.1, Multiple Tenants



Multiple tenants on the same floor are required to have access to the required means of egress without passing through adjacent tenant spaces.

New exception applies if all of the following are met:

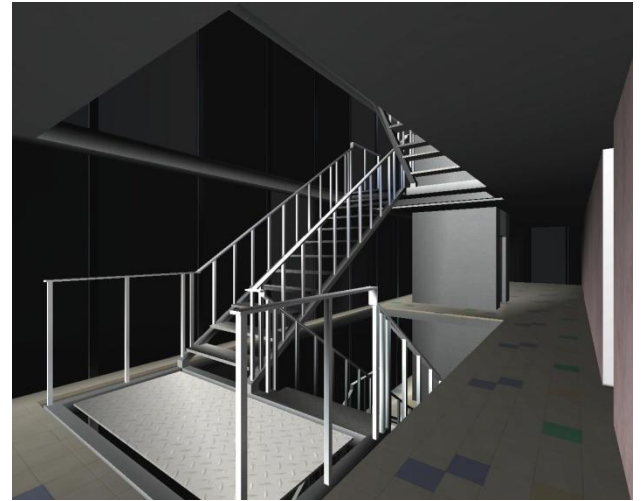
- Space occupies <10% of the area it passes through
- Same or similar occupancy group
- A discernable path is provided
- Means of egress is not subject to locking from egress side
- The larger space shall not egress through the smaller space

1014.3, Common path of egress travel



Exception #4 is new.

In an R-2 occupancy, the common path of egress travel shall not exceed 125' provided that the building is sprinkled in accordance with section 903.3.1.1.



903.3, Automatic Sprinkler Systems



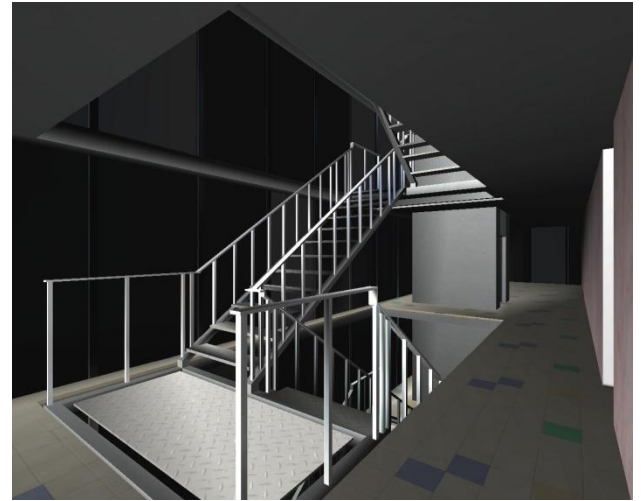
- 903.3.1.1 NFPA 13
- 903.3.1.2 NFPA 13 R
 - Group R occupancies, up to four stories
- 903.3.1.3 NFPA 13 D
 - One- and Two-family dwellings

1014.3, Common path of egress travel



Exception #4 is new.

In an R-2 occupancy, the common path of egress travel shall not exceed 125' provided that the building is sprinkled in accordance with section 903.3.1.1.



NFPA 13 system required to get the 125' exception; otherwise, 75' maximum

Table 1015.1, Spaces with one means of egress



**TABLE 1015.1
SPACES WITH ONE MEANS OF EGRESS**

| OCCUPANCY | MAXIMUM OCCUPANT LOAD |
|--------------------------------|-----------------------|
| A, B, E ^a , F, M, U | 49 |
| H-1, H-2, H-3 | 3 |
| H-4, H-5, I-1, I-3, I-4, R | 10 |
| S | 29 |

a. Day care maximum occupant load is 10.

This is a change. The '06 code would have allowed up to 50 occupants in a Group E day care before a second exit would have been required.

The '09 code allows up to 10 maximum.

308.5.2, Child care facility



Group I-4

- Supervision or personal care
- On less than a 24-hour basis
- More than 5 children
- 2-1/2 years of age or less

Group E

- Supervision or personal care
- On less than a 24-hour basis
- > 5 children, but <100 children
- 2-1/2 years of age or less
- Rooms where children are located shall be on the level of exit discharge and each room shall have an exit door directly the exterior.

Table 1015.1, Spaces with one means of egress



**TABLE 1015.1
SPACES WITH ONE MEANS OF EGRESS**

| OCCUPANCY | MAXIMUM OCCUPANT LOAD |
|--------------------------------|------------------------------|
| A, B, E ^a , F, M, U | 49 |
| H-1, H-2, H-3 | 3 |
| H-4, H-5, I-1, I-3, I-4, R | 10 |
| S | 29 |

a. Day care maximum occupant load is 10.

What if all the children are over 2-1/2 years of age??

Table 1019.2, Buildings with one exit

**TABLE 1019.2
BUILDINGS WITH ONE EXIT**

| OCCUPANCY | MAXIMUM HEIGHT OF BUILDING ABOVE GRADE PLANE | MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE |
|--|--|---|
| A, B ^d , E ^e , F, M, U | 1 Story | 49 occupants and 75 feet travel distance |
| H-2, H-3 | 1 Story | 3 occupants and 25 feet travel distance |
| H-4, H-5, I-1, I-4, R ^f | 1 Story | 10 occupants and 75 feet travel distance |
| S ^a | 1 Story | 29 occupants and 100 feet travel distance |
| B ^b , F, M, S ^a | 2 Stories | 30 occupants and 75 feet travel distance |
| R-2 | 2 Stories ^c | 4 dwelling units and 50 feet travel distance |

For SI: 1 foot = 304.8 mm.

- For the required number of exits for parking structures, see Section 1019.1.1.
- For the required number of exits for air traffic control towers, see Section 412.1.
- Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1026 shall have a maximum height of three stories above grade plane.
- Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 with an occupancy in Group B shall have a maximum travel distance of 100 feet.
- Day care maximum occupant load is 10.
- R-4 adult and child day care facilities shall have two exits or the rooms where the occupants receive care shall be located on the level of exit discharge and each of these rooms shall have an exit door directly to the exterior.

The same changes are consistent in this table.

Day care maximum occupant load is 10

Max. occupants of 49 and 29 have been changed to be more consistent with requirements in the text; such as door swing and panic hardware.

QUESTIONS?

Changes in the North Carolina Building Code



2006 / 2009

**COMPARISON OF
SIGNIFICANT CHANGES**